IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strikethrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please AMEND claim 17 in accordance with the following:

1. (Original) A three-dimensional visual sensor for obtaining three-dimensional information on an objective workpiece based on an image of the objective workpiece captured by projecting a reference beam onto the objective workpiece, comprising:

means for storing, as reference information, information on a first region including a characteristic part of the objective workpiece and a second region as a target region of three-dimensional measurement of the objective workpiece, said information on the first and second regions being obtained from a two-dimensional image of a reference workpiece of the same type as the objective workpiece, which is captured from a predetermined position;

means for capturing an image of the objective workpiece and determining a region corresponding to said first region in the image of the objective workpiece;

means for determining a region corresponding to said second region based on information on a position of the region determined as corresponding to said first region and said reference information stored in said storage means; and

means for obtaining three-dimensional information on the objective workpiece in the region determined as corresponding to said second region of an image of the objective workpiece captured by projecting said reference beam onto the objective workpiece.

2. (Original) A three-dimensional visual sensor according to claim 1, wherein said reference information includes information on a position of said first region and a position and a range of said second region.

3. (Original) A three-dimensional visual sensor according to claim 1, wherein said reference information includes information on a positional relation between said first and second regions and a range of said second region.

4. (Original) A three-dimensional visual sensor according claim 1, wherein the two-

dimensional image from which the information on said first region is obtained is a two-dimensional image captured without projecting the reference beam, and the two-dimensional image from which the information on said second region is obtained is a two-dimensional image captured by projecting the reference beam.

5. (Original) A three-dimensional visual sensor according to claim 1, wherein the two-dimensional image from which the information on said first and second regions is obtained is a two-dimensional image captured by projecting the reference beam.

6. (Original) A three-dimensional visual sensor for obtaining three-dimensional information on an objective workpiece based on an image of the objective workpiece captured by projecting a reference beam onto the objective workpiece, comprising:

means for storing, as reference information, information on a first region including a characteristic part of the objective workpiece and a second region as a target region of three-dimensional measurement of the objective workpiece, said information on the first and second regions being obtained from a two-dimensional image of a reference workpiece of the same type as the objective workpiece, which is captured from a predetermined position;

means for capturing an image of the objective workpiece and determining a region corresponding to said first region in the image of the objective workpiece;

means for determining a region corresponding to said second region based on information on a position and an orientation of the region determined as corresponding to said first region and said reference information stored in said storage means; and

means for obtaining three-dimensional information on the objective workpiece in the region determined as corresponding to said second region of an image of the objective workpiece captured by projecting said reference beam onto the objective workpiece.

7. (Original) A three-dimensional visual sensor according to claim 6, wherein said reference information includes information on a position and an orientation of said first region and a position and a range of said second region.

8. (Original) A three-dimensional visual sensor according to claim 6, wherein said reference information includes information on an orientation of said first region, a range of said second region, and a positional relation between said first and second regions.

9. (Original) A three-dimensional visual sensor according to claim 6; wherein the two-dimensional image from which the information on said first region is obtained is a two-dimensional image captured without projecting the reference beam, and the two-dimensional image from which the information on said second region is obtained is a two-dimensional image captured by projecting the reference beam.

10. (Original) A three-dimensional visual sensor according to claim 6, wherein the two-dimensional image from which the information on said first and second regions is obtained is a two-dimensional image captured by projecting the reference beam.

11. (Original) A three-dimensional visual sensor for obtaining three-dimensional information on an objective workpiece based on an image of the objective workpiece captured by projecting a reference beam onto the objective workpiece, comprising:

means for storing, as reference information, information on a first region including a characteristic part of the objective workpiece and a second region as a target region of three-dimensional measurement of the objective workpiece, said information on the first and second regions being obtained from a two-dimensional image of a reference workpiece of the same type as the objective workpiece, which is captured from a predetermined position;

means for capturing an image of the objective workpiece and determining a region corresponding to said first region in the image of the objective workpiece;

means for determining a region corresponding to said second region based on information on a position and a size of the region determined as corresponding to said first region and said reference information stored in said storage means; and

means for obtaining three-dimensional information on the objective workpiece in the region determined as corresponding to said second region of an image of the objective workpiece captured by projecting said reference beam onto the objective workpiece.

12. (Original) A three-dimensional visual sensor according to claim 1 1, wherein said reference information includes information on a position and a size of said first region, and a position and a range of said second region.

13. (Original) A three dimensional visual sensor according to claim 11, wherein said reference information includes information on a size of said first region, a range of said second region, and a positional relation between said first and second regions.

14. (Original) A three-dimensional visual sensor according to claim 11, wherein the two-dimensional image from which the information on said first region is obtained is a two-dimensional image captured without projecting the reference beam, and the two-dimensional image from which the information on said second region is obtained is a two-dimensional image captured by projecting the reference beam.

15. (Original) A three-dimensional visual sensor according to claim 11, wherein the two-dimensional image from which the information on said first and second regions is obtained is a two-dimensional image captured by projecting the reference beam.

16. (Original) A three-dimensional visual sensor for obtaining three-dimensional information on an objective workpiece based on an image of the objective workpiece captured by projecting a reference beam onto the objective workpiece, comprising:

means for storing, as reference information, information on a first region including a characteristic part of the objective workpiece and a second region as a target region of three-dimensional measurement of the objective workpiece, said information on the first and second regions being obtained from a two-dimensional image of a reference workpiece of the same type as the objective workpiece, which is captured from a predetermined position;

means for capturing an image of the objective workpiece and determining a region corresponding to said first region in the image of the objective workpiece;

means for determining a region corresponding to said second region based on information on a position, an orientation and a size of the region determined as corresponding to said first region and said reference information stored in said storage means; and

means for obtaining three-dimensional information on the objective workpiece in the region determined as corresponding to said second region of an image of the objective workpiece captured by projecting said reference beam onto the objective workpiece.

17. (Currently Amended) A three-dimensional visual sensor according to claim 1, wherein said reference information includes information on a position, a size and an orientation of said first region, and a position and a range of said second region.

18. (Original) A three-dimensional visual sensor according to claim 16, wherein said reference information includes information on a size and an orientation of said first region, a

range of said second region, and a positional relation between said first and second regions.

19. (Original) A three-dimensional visual sensor according to claim 16, wherein the two-dimensional image from which the information on said first region is obtained is a two-dimensional image captured without projecting the reference beam, and the two-dimensional image from which the information on said second region is obtained is a two-dimensional image captured by projecting the reference beam.

20. (Original) A three dimensional visual sensor according to claim 16, wherein the two-dimensional image from which the information on said first and second regions is obtained is a two-dimensional image captured by projecting the reference beam.

21. (Withdrawn) A three-dimensional visual sensor for capturing an image of an objective workpiece projecting a reference beam onto the objective workpiece, and obtaining three-dimensional information on the objective workpiece, comprising:

means for predetermining a region for obtaining three-dimensional information on the objective workpiece in a captured linage of a reference workpiece of the same type as the objective workpiece;

means for determining a position of a region corresponding to said predetermined region in an image of the objective workpiece which is captured by projecting the reference beam onto the objective workpiece based on predetermined information on the objective workpiece; and

means for obtaining three-dimensional information on the objective workpiece in said region of which the position has been determined.

22. (Withdrawn) A three-dimensional visual sensor according to claim 21, wherein said predetermined information includes information obtained from measurement of the height of the objective workpiece.

23. (Withdrawn) A three-dimensional visual sensor according to claim 21, wherein the three-dimensional visual sensor is attached to a robot, and said predetermined information includes information on a positional relation between the objective workpiece and the robot obtained based on positional information of the robot.

24. (Withdrawn) A three-dimensional visual sensor according to claim 21, wherein

said predetermined information includes information supplied externally.

25. (Withdrawn) A three-dimensional visual sensor for capturing an image of an objective workpiece projecting a reference beam onto the objective workpiece, and obtaining three-dimensional information on the objective workpiece, comprising:

means for predetermining a region for obtaining three-dimensional information on the objective workpiece in a captured image of a reference workpiece of the same type as the objective workpiece;

means for determining a position and a size of a region corresponding to said predetermined region in an image of the objective workpiece which is captured by projecting said reference beam onto the objective workpiece based on predetermined information on the objective workpiece; and

means for obtaining three-dimensional information on the objective workpiece in said region of which the position and size have been determined.

26. (Withdrawn) A three-dimensional visual sensor according to claim 25, wherein said predetermined information includes information obtained from measurement of the height of the objective workpiece.

27. (Withdrawn) A three-dimensional visual sensor according to claim 25, wherein the three-dimensional visual sensor is attached to a robot, and said predetermined information includes information on a positional relation between the objective workpiece and the robot obtained based on positional information of the robot.

28. (Withdrawn) A three-dimensional visual sensor according to claim 25, wherein said predetermined information includes information supplied externally.

29. (Withdrawn) A three-dimensional visual sensor for capturing an image of an objective workpiece projecting a reference beam onto the objective workpiece, and obtaining three-dimensional information on the objective workpiece, comprising:

means for predetermining a region for obtaining three-dimensional information on the objective workpiece in a captured image of a reference workpiece of the same type as the objective workpiece;

means for determining the position and orientation of a region corresponding to said predetermined region in an image of the objective workpiece which is captured by projecting said reference beam onto the objective workpiece based on predetermined information on the objective workpiece; and

means for obtaining three-dimensional information on the objective workpiece in said region of which the position and orientation have been determined.

30. (Withdrawn) A three-dimensional visual sensor according to claim 29, wherein the three-dimensional visual sensor is attached to a robot, and said predetermined information includes information on a positional relation between the objective workpiece and the robot obtained based on positional information of the robot.

31. (Withdrawn) A three-dimensional visual sensor for capturing an image of an objective workpiece projecting a reference beam onto the objective workpiece, and obtaining three-dimensional information on the objective workpiece, comprising:

means for predetermining a region for obtaining three-dimensional information on the objective workpiece in a captured image of a reference workpiece of the same type as the objective workpiece;

means for determining the position, orientation and size of a region corresponding to said predetermined region in an image of the objective workpiece which is captured by projecting said reference beam onto the objective workpiece based on predetermined information on the objective workpiece; and

means for obtaining three-dimensional information on the objective workpiece in said region of which the position, orientation and size have been determined.

32. (Withdrawn) A three-dimensional visual sensor according to claim 31, wherein the three-dimensional visual sensor is attached to a robot, and said predetermined information includes information on a positional relation between the objective workpiece and the robot obtained based on positional information of the robot.